QUANCOM
INFORMATIONSSYSTEME

CLOCK77/PCI
CLOCK77/USB
CLOCK77/ISA

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1. Overview

1.1 Introduction

Congratulations to your new QUANCOM DCF77 clock-receiver. You've chosen a product whose attributes and functions are showing the state-of-the art.

1.2 Our experience is your profit

We from QUANCOM are specialists in development of hard- and software. QUANCOM has grown to become one of the leading suppliers of measuring and automation technology to industry. At our design centres QUANCOM has developed an impressive range of products.

1.3 Customer Communication

QUANCOM wants to receive your comments on our products and manuals. We are also interested in the applications you developed with our products, and we want to help if you have problems with them. To make it easy for you to contact us, this manual contains comment and configuration forms for you to complete. These forms are in chapter " **Documentation Comment Form**" at the end of this manual.

1.4 Changes in this manual and software updates

QUANCOM - products are distinguished by their constant further development. You can see all the actual information of the changes in the README-file on the installation disk or CD. You can always get more information and free software updates on our internet website **www.quancom.de**

1.5 Scope of supply

- QUANCOM Clock77 (PCI-Card / USB Module)
- QUANCOM Clock-Receiver (only by CLOCK77/PCI)
- QUANCOM Clock CD

Contents on the CD:

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- Driver/ Software for the various operating systems
- Manual

If a component is missing please contact your dealer. QUANCOM reserves the right to change the extent of delivery without a preliminary announcement.

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2. Installation procedures

2.1 System requirements

- Personal computer: The QUANCOM cards run with all current Intel and AMD systems
- Bus: Your computer must have the corresponding bus. (PCI / USB)

In chapter “Technical hardware description” you’ll find more informations about the System requirements.

2.2 Safety precautions

For the sake of your security and the faultless function of your new QUANCOM board mind the following advice:

- Before opening the computer please unplug it.
- Computer motherboards and components contain very delicate integrated circuit (IC) chips. To protect them against damage from static electricity, you must follow some precautions whenever you work on your computer. Use a grounded wrist strap before handling computer components. If you don’t have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
- Hold components by the edges and try not to touch the integrated circuit chips, leads or circuitry.
- Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the System.

Modifications, made to the device without explicit permission from QUANCOM, lead to the loss of the operating permission and the CE certificate.

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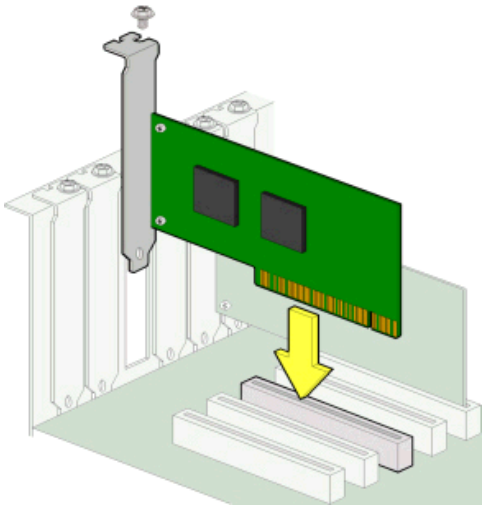
2.3 Installation of the DCF-Clock interface board

Always turn the system power off and remove the power cord from the wall before installing or removing any device.
Always pay regard to static electricity precautions.
See “Safety precautions”

1. Switch off the computer and the connected devices and unplug them. Static electricity can destroy your computer and the board!
   Discharge yourself as described in chapter ”Safety precautions”.



2. To open your PC you have to detach the four safety screws on the back of the case with a screw driver. Then you can pull the cover forwards. If necessary you must remove impeding cables.

3. The slots are positioned at the rear side of your computer. Unused slots are covered by a small metal plate. Search for a free slot, detach its holding screw and remove the small metal plate belonging to it.

4. Position the extension card into a free slot Pay attention that the card is set firmly in the slot.

5. Fasten the board with the screw of the small metal plate on the back wall.

6. Close the cover of your computer. Cables, that you detached during the installation, should now be reconnected.

7. Connect the cable of the board into the slot belonging to it.

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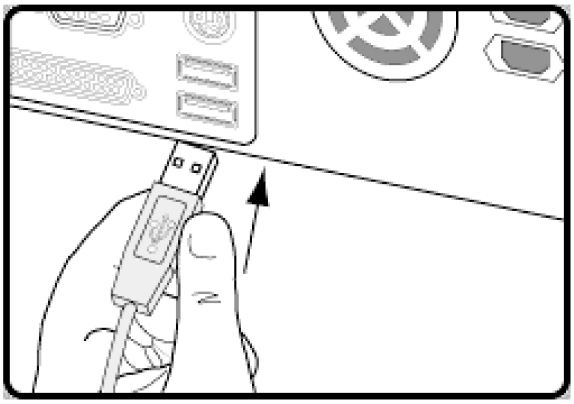
2.4 Connecting the USB- Module

Switch on the PC and start Windows. Install the driver as shown in chapter “**Installing the CLOCK77/USB for Windows XP/2000**” or ”**Installing the CLOCK77/USB for Windows ME/98** and after that you safely can connect the USB-Module to the PC. If you do otherwise, Windows won’t find the drivers and the module won’t work properly.

To locate the USB-connectors of your PC you have to look into the manual of your motherboard or PC-System. The location varies from model to model.



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3. Technical hardware description

3.1 Product Information

With the CLOCK77 we developed a new product for the PC which can be attached easily to every computer and provides the atomic exact time-of-day. The deviation is approx. one second in 300,000 years.

The data from the receiver of the CLOCK77 is processed by a Windows XP/2000/NT/ME/98/95 background task. There is also a DOS-TSR (Terminate and Stay Resistant) background program for Windows 3.1x and Dos which processes data from the CLOCK77 (except the **CLOCK77/USB** which depends on support of USB through the Operating System).

After the complete clock code is received, the software adjusts the PC clock to the received atomic exact time and date value. This means that in the future, the user can ignore the often reoccurring and disturbing deviations of the PC clock completely. Once connected with the PC and installed, even the annoying conversion of summer to winter time belongs to the past. Thanks to the signals from the German Mainflingen, CLOCK77 accomplishes this function independently.

The receiver module is delivered with one lead, approx. 5m, and a D-SUB plug connector or USB-connector. All necessary signals and power supply for the module are supplied by the interface.

The cable of the **CLOCK77/PCI + CLOCK77/ISA** of receiver can be extended on up to 20m. For distances more largely we offer an additional **CLOCK AMPLIFIER**, with which you can attach the receiver up to 100m far away from the CLOCK77 to 20m.

CLOCK77 is available in three versions: **CLOCK77/USB**, **CLOCK77/PCI** and **CLOCK77/ISA**. The modules are attached to the PC-Interface-board or to the USB-connector. All CLOCK77-systems are delivered with driver-support for Windows XP / 2000 / NT / ME / 98 / 95 and DOS / Windows 3.x. For all other Operating systems a sample

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source-code shows the access to the Interface and the CLOCK77. (Except for **CLOCK77/USB** which is only supported by Windows XP / 2000 / ME / 98)

3.2 How the CLOCK77 works

After calling up the software CLOCK77, the antenna system receives signals from the transmitter in Mainflingen. On a certain signal (synchronisation label) the software detects, that the data for the current time-of-day is now being transmitted. These datas consist of short and long low-signals and are transmitted for one minute. Afterwards the software resets the new time-of-day and if necessary the new date on the PC.

3.3 Steps of installation (only for Clock77 / ISA)

Set the desired port address on the CLOCK77/ISA (see in Chapter ”The CLOCK77 ISA board”). Switch your PC off, remove the screws, remove the cover and put the slot card into a free slot. Replace the cover of your computer and fasten the screws. Fasten the receiver to the socket of the slot card and turn your computer on.
Then start the system and install the software.

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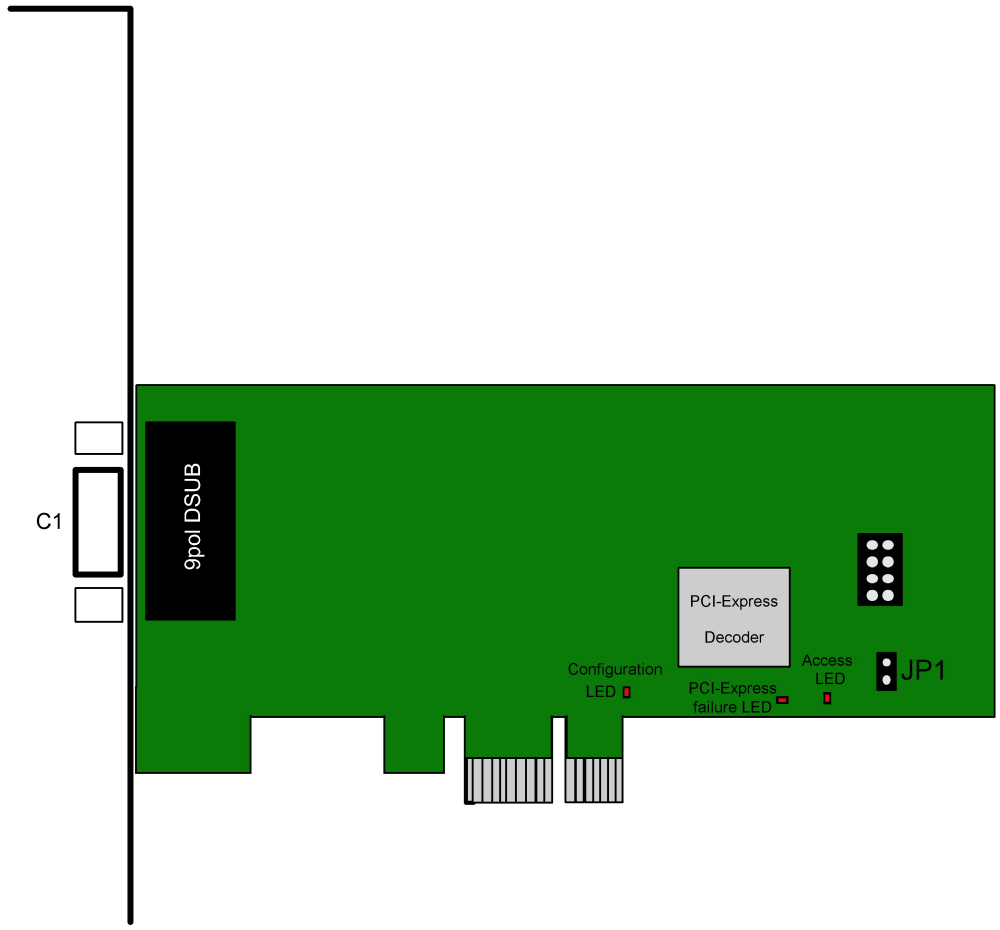
3.4 CLOCK77/PCI-Express

3.4.1 Board overview



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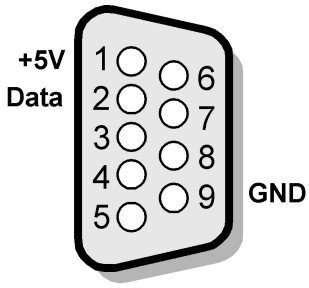
3.4.2 Connector of the CLOCK77/PCI-Express



3.4.3 LED Description

The LED 1 (Configuration LED) lights until the PCI Express interface is configured. This happens at the start, until reset the computer or by the operating system.
(LED didn´t light => PCI-Express interface is configured.)

The LED 2 (Access LED) flashes briefly when requests (such as reading, writing) to the CLOCK77/PCI-Express card.

The LED 3 (PCI-Express failure LED) lights up when the connection to the PCI-Express bus can not be carried out.
(LED didn´t light => connection to the PCI-Express is ok.)

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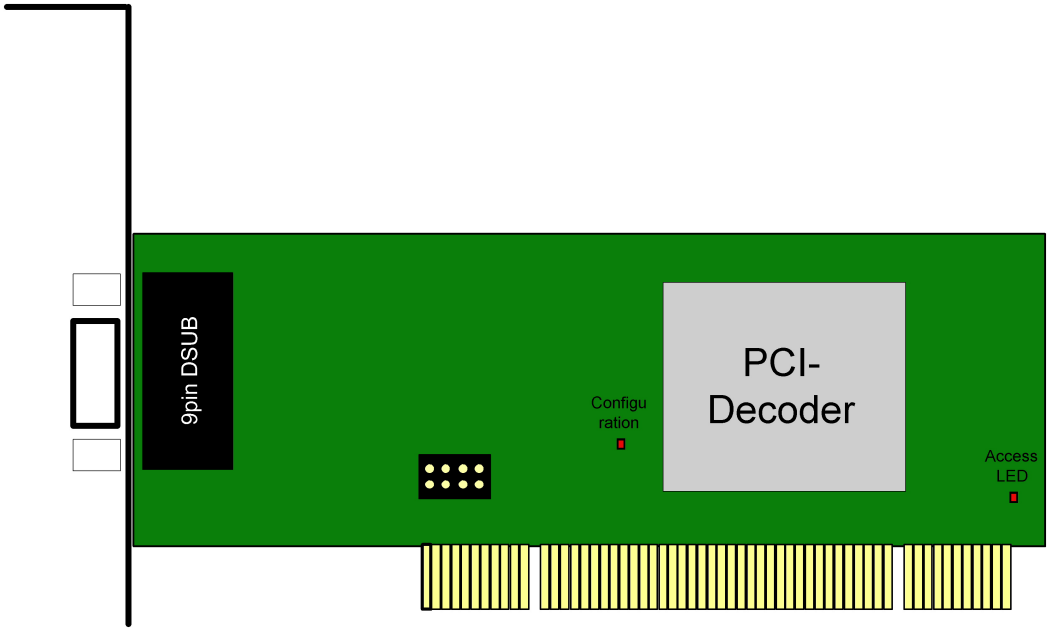
3.5 CLOCK77/PCI (Rev. 4.x)

3.5.1 Board overview



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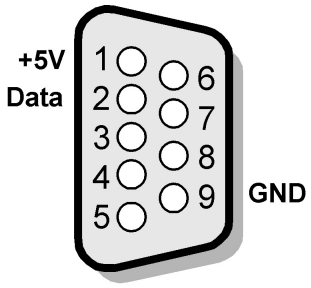
3.5.2 Connector to the CLOCK77 receiver-module



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3.5.3 LED Description

Die LED 1 (Konfigurations- LED) lights until the **Clock77/PCI** interface is configured. This happens at the start, until reset the computer or by the operating system.

Die LED 2 (Access LED) flashes briefly when requests (such as reading, writing) to the **CLOCK77/PCI Card**.

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3.6 CLOCK77/USB

3.6.1 USB Receiver Module

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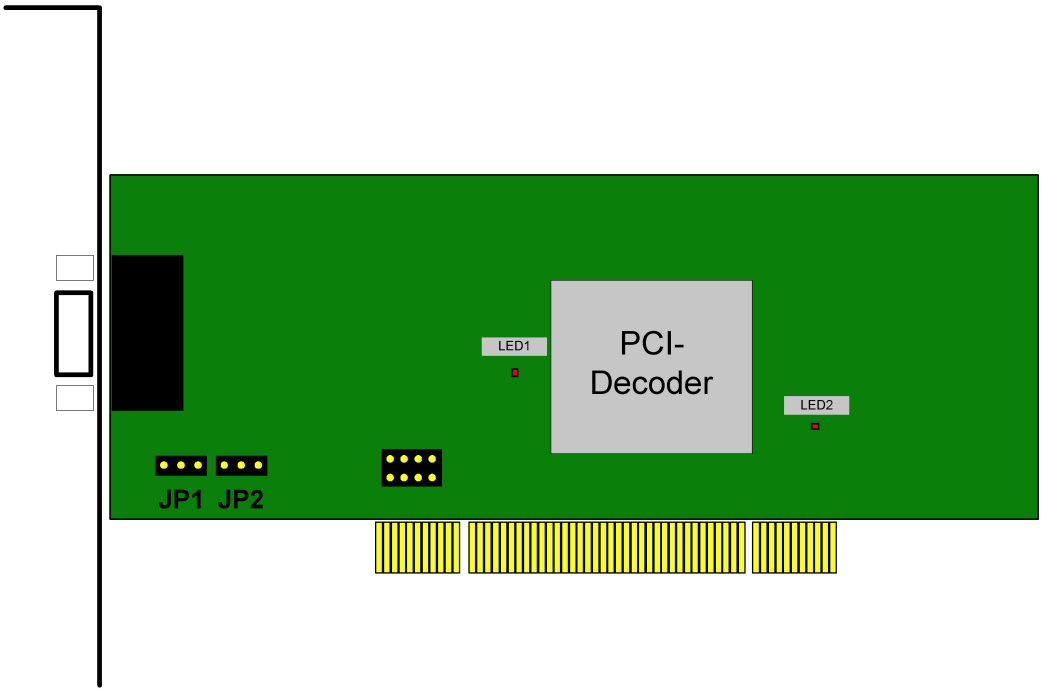
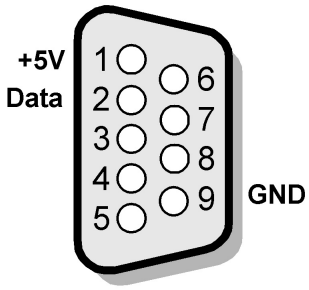
3.7 CLOCK77/PCI (Rev. 3.x)

Available since May 2003. The card is comparable with the clock 77 PCI (Rev.2.x)
The attitude between 3,3V and 5V operating voltage is new. It was replaced in the meantime by the CLOCK77/PCI (Rev.4.x.).

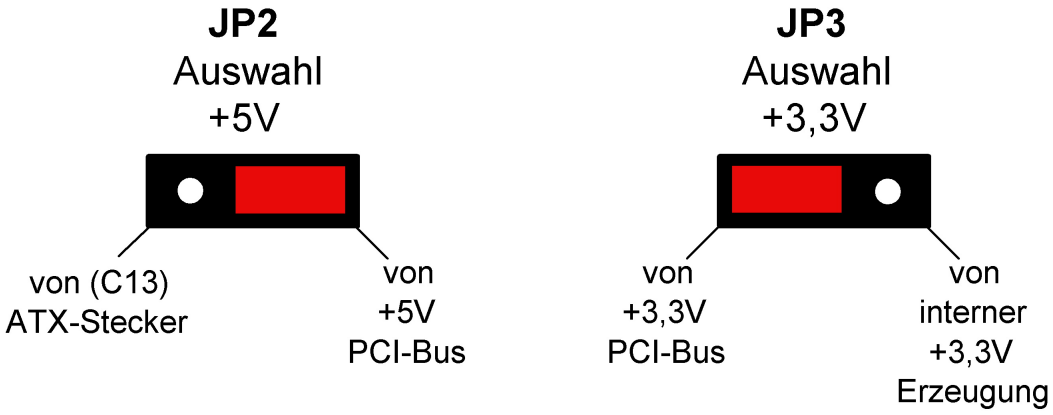
3.7.1 Board overview



3.7.2 Connector to the CLOCK77 receiver-module



3.7.3 Jumper settings for cards power supply



Semple Jumper settings for 5V power supply

Semple Jumper settings for 3,3V power supply

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3.7.4 LED Description

Die LED 1 (Konfigurations- LED) lights until the **Clock77/PCI** interface is configured. This happens at the start, until reset the computer or by the operating system.

Die LED 2 (Access LED) flashes briefly when requests (such as reading, writing) to the **CLOCK77/PCI Card**.

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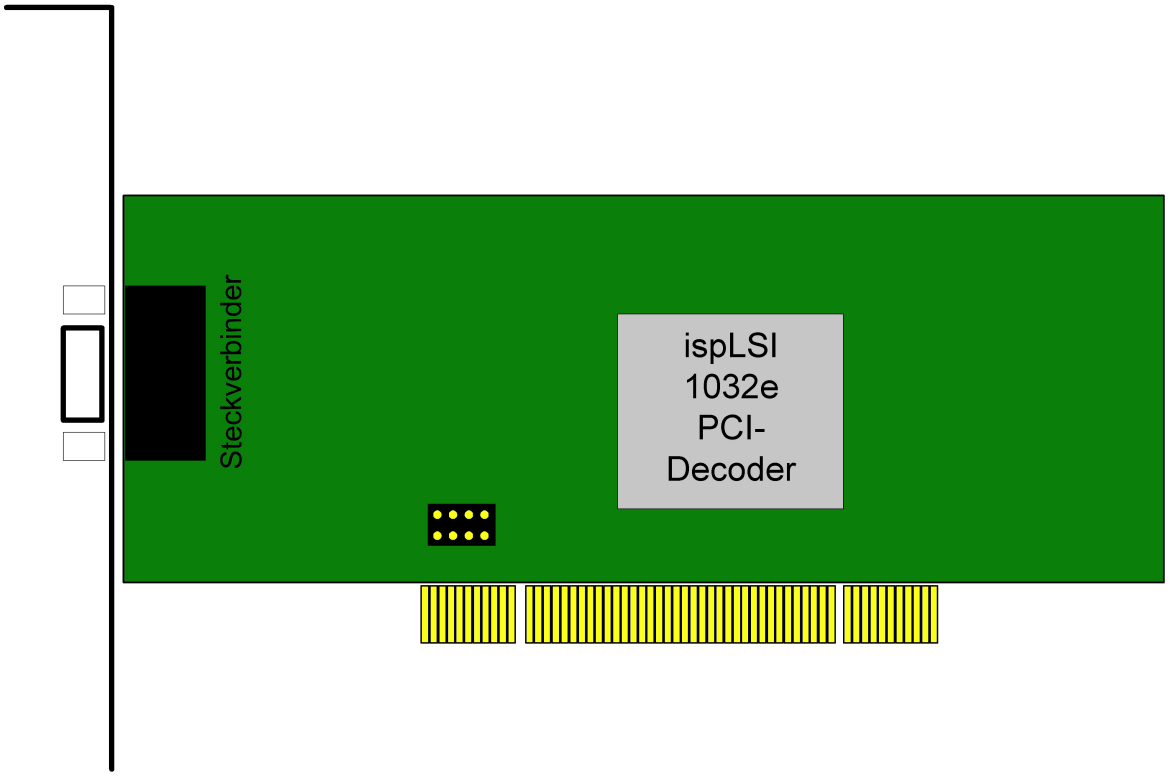
3.8 CLOCK77/PCI Card (Rev. 2.x)

This version of the interface map became in May 2003 by the Rev. 3.x replaces.

3.8.1 Board overview



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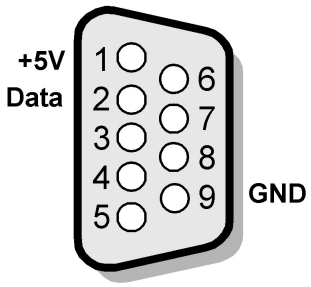
3.8.2 Connector to the CLOCK77 receiver-module



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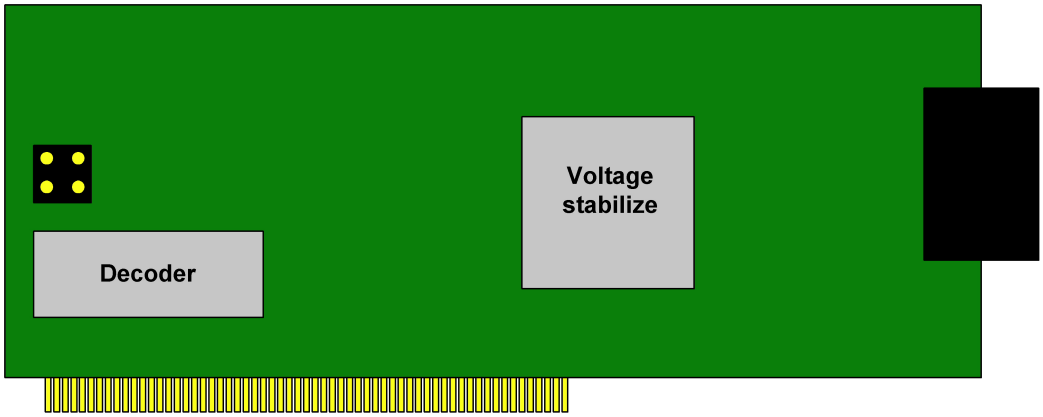
3.9 CLOCK77/ISA Card

3.9.1 Board overview



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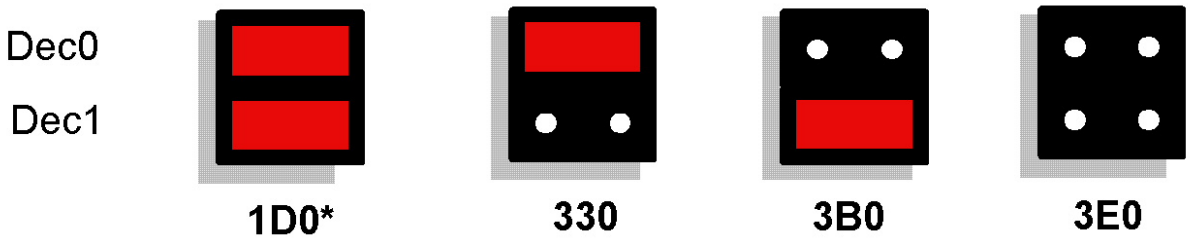
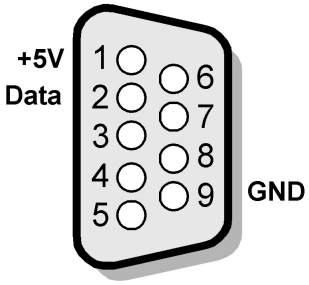
3.9.2 JP1: Address jumper for I/O connection in the PC



3.9.3 D-Sub 9 socket of CLOCK77/ISA, CLOCK77/PCI



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4. Installing drivers and software for the QUANCOM CLOCK77

4.1 Installing the CLOCK77/USB

The installation of the drivers has to be done with the rights of the system-administrator. If you don't own such rights, contact your system administrator.

1. Step: Software Installation

Insert the **QUANCOM Installation- CD** into the CD-ROM. It is important that you connect the USB-module after the software installation.

- Click on "**Start | Run**", and choose **CLK77D.EXE** from the **WIN-XP-2000** folder of the Installations-CD and click on "*OK*".
- If after starting CLK77D.EXE a message-box appears, which prompts for a restart of the system, click on "*Yes*". After rebooting the system the installation will resume automatically.
  (This step will only be necessary if no version of the software-installer is present on your system)
- Continue the installation after reboot with clicking on "*Next*" in the shown window.
  (Please obey, that you close all running windows-programs prior installation of the drivers.)
- After reading and agreeing the license agreement with "*I accept the license agreement*" go on with "*Next*".
- You may now enter your personal user-data (name; organisation) and accept your entered values with "*Next*".
- You can choose the destination path of the CLOCK77-Software with "*Browse*". Click on "*Next*" to accept your decision.
- Now you choose the model of your clock: **CLOCK77/USB** and go on with "*Next*".
- The installation-process will be started with "*Next*".

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- After the files were copied and the drivers registered, the installation will be closed with “ *Finish*”.
- You now may connect the **CLOCK77/USB** to a free USB- connector and reboot your system to ensure that all drivers are loaded properly.

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4.2 Installing the CLOCK77/PCI

The installation of the drivers has to be done with the rights of the system-administrator. If you don't own such rights, contact your system administrator.

1. Step : installation of the drivers:

The PCI-Interface board will be recognized by Windows and Windows will prompt demand for drivers for the new device. Insert the **Clock-Installation- CD** into your CD-ROM-drive.

- If the dialog box "New hardware found" appears, choose "*Next*".
- After that, you have to select "Search for a suitable driver for the equipment (recommended)", and confirm with "*Next*".
- As source for the driver's search you have to select "*Choose the destination*" and press "*Next*".
- Windows opens a dialog to chose a file now. Please click on the button "*Choose*". Change to the CD-Drive and choose the folder **Win-XP-2000**. Windows will find the file **CLK77PCI.INF** automatically. Please click on "*OK*" to move on with the installation of the driver.
- In the next window you have to confirm with "*Next*" that you want to install the driver.
- In the following window you finish the installation of the QUANCOM driver with a click on the button "*Finish*".

1. Step: Software Installation:

After installation of the drivers for the interface board, the **CLOCK77 Software** has to be installed.

- Click on **Start | Run**, and choose **CLK77D.EXE** from the **WIN-XP-2000** folder of the Installation-CD and click on "*OK*".
- If after starting **CLK77D.EXE** a message-box appears, which prompts for a restart of the system, click on "*Yes*". After rebooting the system the installation will resume

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automatically.
(This step will only be necessary if no version of the software-installer is present on your system)

- Continue the installation after reboot with clicking on “*Next*” in the shown window.
(Please obey, that you close all running windows-programs prior installation of the drivers.)

- After reading and agreeing the license agreement with “*I accept the license agreement*” go on with “*Next*”.

- You may now enter your personal user-data (name; organisation) and accept your entered values with “*Next*”.

- You can choose the destination path of the CLOCK77-Software with “*Browse*”. Click on “*Next*” to accept your decision.

- Now you choose the model of your clock: **CLOCK77/PCI** and go on with “*Next*”.

- The installation-process will be started with “*Next*”.

- After the files were copied and the drivers registered, the installation will be closed with “*Finish*”.

- You now may reboot your system to ensure that all drivers are loaded properly.

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4.3 Installing the CLOCK77/ISA

The installation of the drivers has to be done with the rights of the system-administrator. If you don't own such rights, contact your system administrator.

1. Step : installation of the drivers:

To install the drivers of the ISA-card insert the **Clock-Installation- CD** into your CD-ROM-drive and click on "**Start | Settings | Control Panel"**.

- Double-click on "*Hardware*"
- Choose "*Next*"
- Now choose "*Add a new device*" and click on "*Next*".
- In the following window chose "*No, select device from list*" and go on with "*Next*".
- From the shown list chose "other devices" and click on "*Next*".
- Now click on "*Disk*" and then on "*Browse*"
- Now choose **CLK77ISA.INF** from the folder **WIN-XP-2000** on the Installation-CD and continue with "*Open*".
- Commit the following Window with "*OK*".
- Now choose "***CLOCK77/ISA***" and click on "*Next*".
- The drivers for the interface-board will be installed after you click on "*Next*".
- After the files were copied and the drivers registered, the installation will be closed with " *Finish*".
- You now may reboot your system to ensure that all drivers are loaded properly.

1. Step: Software Installation:

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After installation of the drivers for the interface board, the **CLOCK77 Software** has to be installed.

- Click on **Start | Run**, and choose **CLK77D.EXE** from the **WIN-XP-2000** folder of the Installations-CD and click on "*OK*".

- If after starting **CLK77D.EXE** a message-box appears, which prompts for a restart of the system, click on "*Yes*". After rebooting the system the installation will resume automatically.
  (This step will only be necessary if no version of the software-installer is present on your system)

- Continue the installation after reboot with clicking on "*Next*" in the shown window.
  (Please obey, that you close all running windows-programs prior installation of the drivers.)

- After reading and agreeing the license agreement with "*I accept the license agreement*" go on with "*Next*".

- You may now enter your personal user-data (name; organisation) and accept your entered values with "*Next*".

- You can choose the destination path of the CLOCK77-Software with "*Browse*". Click on "*Next*" to accept your decision.

- Now you choose the model of your clock: **CLOCK77/ISA** and go on with "*Next*".

- The installation-process will be started with "*Next*".

- After the files were copied and the drivers registered, the installation will be closed with "*Finish*".

- You now may reboot your system to ensure that all drivers are loaded properly.

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4.4 Installing the CLOCK77/PCI for Windows NT 4

The installation of the drivers has to be done with the rights of the system-administrator. If you don't own such rights, contact your system administrator.

1. Step: Software Installation:

After you inserted the interface board into the PC, the **CLOCK77 Software** has to be installed. Insert the **Clock-Installation- CD** into your CD-ROM-drive.

- Click on **Start | Run,** and choose **SETUP.EXE** from the **WIN-NT** folder of the Installation-CD and click on "*OK*".
  (Please obey, that you close all running windows-programs prior installation of the software.)
- Start the process with clicking on "*Next*".
- Now you choose the model of your clock: **PCI-Card** and go on with "*Next*".
- You can choose the destination path of the CLOCK77-Software with "*Browse*". Click on "*Next*" to accept your decision.
- The installation-process will be started with "*Next*".
- After the files were copied and the drivers registered, the installation will be closed with "*OK*".
- You now may reboot your system to ensure that all drivers are loaded properly.

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4.5 Installing the CLOCK77/ISA for Windows NT 4

The installation of the drivers has to be done with the rights of the system-administrator. If you don't own such rights, contact your system administrator.

1. Step: Software Installation:

After you inserted the interface board into the PC, the **CLOCK77 Software** has to be installed. Insert the **Clock-Installation- CD** into your CD-ROM-drive.

- Click on **Start | Run,** and choose **SETUP.EXE** from the **WIN-NT** folder of the Installation-CD and click on "*OK*".
  (Please obey, that you close all running windows-programs prior installation of the software.)
- Start the process with clicking on "*Next*".
- Now you choose the model of your clock: **ISA-Card** and go on with "*Next*".
- Inside the following screen enter the base-address of your ISA-board and continue with " *Next*".
- You can choose the destination path of the CLOCK77-Software with "*Browse*". Click on " *Next*" to accept your decision.
- The installation-process will be started with "*Next*".
- After the files were copied and the drivers registered, the installation will be closed with " *OK*".
- You now may reboot your system to ensure that all drivers are loaded properly.

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5. Software

5.1 Antenna adjustment for the reception of time signals

So that the **CLOCK77/USB**, **CLOCK77/PCI** or **CLOCK77/ISA** card can receive a time signal to be analysed, the antenna must be properly aligned.

Please start the CLOCK77 monitor program. This program displays the arriving signals as lines. Green lines mean that the signal is Ok, red lines, on the other hand, mean the signal is weak, bad or disturbed. The antenna should be aligned so that only green lines are displayed for several minutes. If no lines are displayed, then the reception of the time is not possible.

In this case it is necessary to correct the position of the antenna. **In particular radiation-loaded computer environments disturb the perfect reception of the time-of-day**. For this reason you should position the antenna as for as possible from disturbing computers or other disturbing devices. The time-of-day will be reset, as soon as the time is received correctly three times. Thereby it is excluded that a false time-of-day is appointed due to reception errors.

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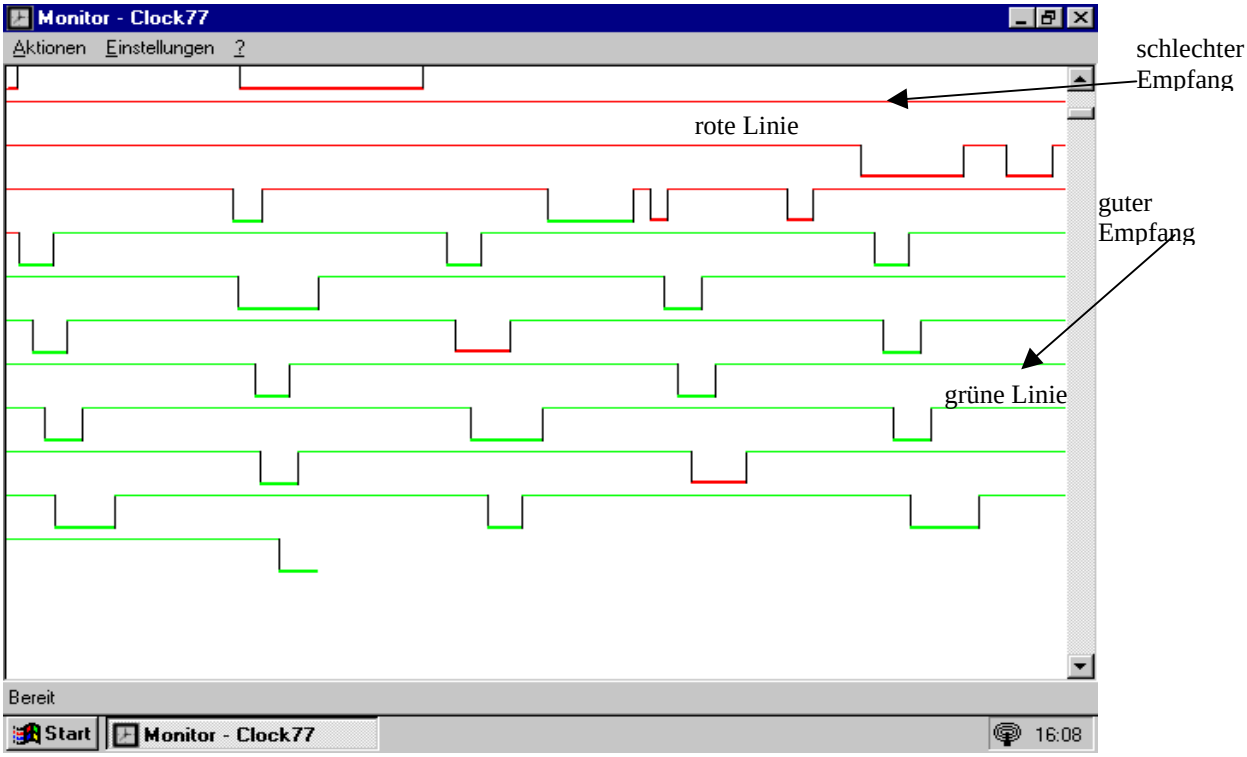
5.2 The monitor program (only Microsoft Windows)

With the delivery of the QUANCOM CLOCK77 USB/PCI/ISA card you will get a special monitor program. This program is able to show whether the reception is good or bad. If the signal reception is bad, you will see red lines on your monitor program and if it is good, you will see green lines. To open the program right click on the CLOCK77 symbol in the task bar and choose the option ”open monitor”. During installation, the program will automatically be moved into the startup folder and will start every time you log on.
A service program, which runs in the background, refreshes the time in regular intervals, even when you are not logged on.



These updates are shown in the event protocol of Windows 2000/NT. If you have no reception after a successful installation, hold the antenna close to your computer monitor. The antenna will receive the monitor radiation and will show lines on the monitor program of the CLOCK77. In addition it is possible that a bad reception can be caused by the weather.

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6. The Windows 3.1x / DOS Programm

For DOS and Windows 3.1 the time will be adjusted by a Software-interrupt driven background-task. The program is located in the **DOS** folder of the Installation-CD. To start the program with every system-start-up, you have to copy the file to any folder on your harddisk and call it from with the AUTOEXEC.BAT with the proper switches.

- Copy the file to the harddisk i.e.:

  copy <CDROM>:\DOS\clock77.* c:

- Run the program (after connecting the receiver):

  clock77 /p{port} /{switch1}... /{ switch N}

Remark: If the given port doesn't match the address adjusted on the board, the software will return with an error. Check your port or change the base-address of the board.

With the reception of the synchronisation-mark the software will try to decode the received time-signal. If you enabled the status-display (switch /e) different chars will be drawn in the top-left corner of the screen. The description of these chars will follow.

Anzeige	Bedeutung
`-` or `*` (permanent)	No signal or receiver not connected
`-` and `*` (alternating)	Clock is waiting for the synchronisation-mark, but signals are present
`+` and `*` (alternating)	Receiving time

The time will be received multiple times if switch /w is set and the received time differs more than 5 minutes from the internal PC-time.
If an error occurs while receiving the time-signal, the clock waits for the next synchronisation-mark.

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6.1 Switch for the DOS program CLOCK77.EXE

Switch	Function	Remark
/b	Beep when new time is set	
/r	Beep when synchronisation-mark is received	
/e	Show status in top-left corner of screen	
/d	Stop background-task	
/pxxx	Select alternate Base-address	xxx is a hexadecimal number between 100 and 3FF (default.: xxx=1D0)
	LPT1: 378	with Herkules- graphics-card: LPT1: 3BC
	LPT2: 278	
/p0	searches for the CLOCK77/PCI	
/txx	Set offset for received time in hours (positive numbers add xx hours) and (negative numbers subtracts xx hours).	Allowed values: -12 ... 12 Date is adjusted if needed
/wx	Set the number of correct received time-signals, with PC-time difference of more than 5 minutes	(default: x=2)
/f	Check and set PC-time every 2 minutes	

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7. Annex

7.1 When is the time set?

The time is sequentially received (minütlich). If disturbances arise, e.g. to spikes, invalid telegrams are rejected. The time three times correctly received (plausibility check, parity, etc.) is intended the relative deviation of the telegrams for the system time. If these three telegrams do not deviate by any longer than +/-200ms from each other, then the three times are recognized as correct. System time determines. This middle time deviation amounts to more than the adjustable 50ms to 400ms the system time is corrected. I.e. the time is exact on 1 second. In the sequential enterprise the time is thus always corrected in the case of a deviation around more than +/-0,4s.

Most PC clocks drifts with the time. The time is thus corrected in certain time intervals. This can be reconstructed in event minutes (applications). Even if the time is to be set in the case of smaller or only in the case of larger time deviations, then exists a Registry entry, which makes an attitude within the range v. +/-50ms… for possible 60 min.

Registry entry: MaxDiffTime 400 (default 400ms).

7.1.1 The length of my antenna cable is not sufficient

The length of my antenna cable is not sufficient. Is there an extension cord and/or on which length can I the cable extend?

If you liked to extend the cable to more than 20 m, address us please. We can offer an amplifier, which permits also cable lengths of up to 100 m to you. Below 20 m can you the appropriate cable with us order or a 1:1 ground through cable use.

7.1.2 Attitudes of the time

The driver functions correctly only if it is operated in the time belt GMT+1. One can examine this under NT, by doubleclicking the rider “time belt” on the clock symbol in the task border and clicking then. I.e. in following countries and/or cities the driver functions:

Germany

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Sweden (Stockholm)

Italy (Rome)

Switzerland (Berne)

Holland (Amsterdam)

France (Paris)

7.1.3 ID' s in the event announcement under Windows XP/2000/NT

6 The Service started

9 The Service stopped

10 Information (in connection with a String)

11 Warning (in connection with a String)

12 Error (in connection with a String)

13 No signal

14 Fatal Error Service stopped

7.1.4 Windows XP/2000/NT: Distribution of the time in a Windows network

Install the clock in a computer, which is in the network. This computer has a name, e.g. \ \ Platz1 (under network characteristics). From this computer the following instructions are entered: NET TIME \ \ PLATZ1 /SET

Each further computer in the network receives likewise the current time of day.

Install under NT for the Schedule service, and copy the instruction into a batch file. Implement this file with the RK instruction each hour.

7.1.5 Windows XP/2000/NT: Event minutes are overfilled by a large number of inputs

Open the diagnostic and attitude program “CLOCK77.EXE”, by clicking down right in the task border on the antenna symbol.

Select “monitor program”. In the monitor you go please into the menu “attitudes”/“event announcement”.

Switch all entries off up to “error messages”.

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7.1.6 Windows XP/2000/NT: Error message No.: 2140

Windows XP/2000/NT: Error message No.: 2140 when starting of the service “QUANCOM CLOCK77” in the XP/2000/NT service manager.

The error message arises, if the monitor program is active in the task border. The service started causes an error now. Only the monitor program with one right-click on the antenna symbol click and then with “latches” terminate. Afterwards the service can be started.

7.1.7 I cannot install the CLOCK77 under Windows 2000

Break the hardware recognition off our driver CD provided by WIN2000 and installing you the map manually over. After the restart now again the hardware recognition of WIN2000 appears. Therefore one must disablen the CLOCK77 in the equipment manager of WIN2000. This goes with two different methods. Either you go to system control on start >> >> system into the equipment manager from WIN2000 (not the service manager) and disablen the CLOCK77.

Or you click during the hardware recognition of WIN2000 of “far ones” on, discharge for a driver to look and break simply, if WIN2000 requests you the address drivers to indicate. Thus the map becomes automatically disabled.

Now you must accomplish a restart, which is started automatically. The map for WIN2000 is not now disabled and thus appeared also the hardware recognition any more.

7.1.8 Windows ME/98/95: Error message “queue was emptied (Code1)”/no receipt

Examine whether in the monitor a Rechtecksingal, as “_-_-_” and is constantly green it e.g. emerges.
Try the position of the antenna in such a way to move that for each second on the screen a square-wave impulse is almost drawn. Turn also the antenna head somewhat. Furthermore it can be that at certain weather conditions and/or clock times the receipt suffers, but after some hours the receipt again there is. The radio clock software prevents the receipt of wrong

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data in such a situation.

7.1.9 Possible problems under DOS

Can I use a Memory-Manager ? (QEMM 386, EMM386)

It is possible to use a Memory-Manager, but the performance maybe decrease.

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7.2 Customer Communication and Help

Did you need help?

If you don't know how to go on during the installation or operation of your QUANCOM board please consult this user's guide first.

! Tip !

You can find an ASCII – text – file README.TXT, which includes changes made after printing of this user's manual on the QUANCOM installation CD.

! Important !

Informationen bereit: If you have further questions please contact our support team. For this case please prepare the following information:

- Exact type of the board.
- Version of the driver
- Version of the QLIB
- Operating system, hardware equipment and bus - system
- Name and version of the program, which reports the failure
- A detailed failure description. To make sure, please try to reproduce the failure, and describe exactly, which steps led to this failure.

Contact?

Die QUANCOM Internet Webseite
www.quancom.deThe QUANCOM internet website

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http://www.quancom.de/

Per Fax
+49 22 36 / 89 92 - 49

Per E-Mail:
support@quancom.de

Adress:
QUANCOM INFORMATIONSSYSTEME GmbH
In der Flecht 14
50389 Wesseling

Wenn Sie Hilfe brauchen, erreichen Sie uns unter:
QUANCOM Hotline Deutschland If you need urgent help call:QUANCOM Hotline Germany
0 22 36 / 89 92 - 20

Monday-Thursday
from 9:00 to 18:00
Friday
from 9:00 to 17:00

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Aktuelle Treiber

Auf unserer Internetseite http://www.quancom.de können sie immer die neusten Treiber Versionen und Updates finden. Zudem finden Sie ebenfalls viele andere Informationen und die ”Frequently asked questions (FAQ’s)”. Bevor Sie uns kontaktieren, überprüfen Sie ob die neueste Version der QUANCOM Software installiert ist.

Reparatur

Wenn Sie nicht genau wissen, ob die QUANCOM Karte defekt ist, rufen Sie unsere QUANCOM Hotline an:

Tel.: **+49 22 36 / 89 92 – 20**

Bevor Sie uns die Karte zur Reparatur schicken, rufen Sie unsere Hotline an:

Tel.: **+49 22 36 / 89 92 – 20**

Wenn Sie uns die Karte zurückschicken, legen Sie diese bitte in die Originalverpackung oder eine adäquate Verpackung, um einen Transportschaden zu verhindern. Zusätzlich bitten wir Sie, uns eine Kopie der Originalrechnung mitzuschicken.

7.3 Technical support form

If you have internet access please enter the following URL in your browser: **http://www.quancom.de/quancom/qshop.nsf/techniksupport?OpenForm&eng**. Else photocopy this form and use the copy of this form as a reference for your current configuration. Complete this form before contacting QUANCOM Informationssysteme GmbH for technical support and our applications engineers may answer your questions more efficiently. If you are using any other QUANCOM hardware or software products please add them to this configuration form. Include additional pages if necessary.

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Name: _____

Company: _____

Address: _____

Phone: _____

Fax: _____

Computer Brand / Processor: _____

Operating System: _____

Display Adapter: _____

Mouse: _____

QUANCOM board _____

Other adapters installed: _____

Hard disk (capacity, free): _____

The problem is: _____

List any error messages: _____

_____

_____

The following steps cause the problem to recur:

_____

_____

_____

_____

_____

7.4 Hardware and Software configuration form

This form helps you to list your hardware and software settings. Complete this form each time you change your software or hardware configuration, and use this form as a reference for your current configuration. Complete this form accurately before contacting QUANCOM Informationssysteme GmbH for technical support, so that our application engineers can answer your questions more efficiently.

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- **QUANCOM Product:**

Name / Name of board _____

Interrupt Level _____

DMA Channel _____

Basis I/O Address _____

Operating system _____

- **Other Information**

Computer brand and Model _____

Processor _____

Clock Frequency _____

Type of Video Board installed _____

DOS Version _____

Programming Language _____

Programming Language Version _____

- **Other Boards in System**

Basis I/O-Address of other Boards _____

DMA Channels of other Boards _____

Interrupt Level of other Boards _____

7.5 Dokumentations Formular

QUANCOM Informationssysteme GmbH would like you to comment on the documentation supplied with our products. This information helps us to provide you with quality products to meet your needs. Please include additional pages if necessary.

Title:	CLOCK77/PCI CLOCK77/USB CLOCK77/ISA
Edition Date:	15.04.2009

Please comment on the completeness, clarity, and organisation of the manual. If you find errors in the manual, please record the page numbers and describe the errors.

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Thank you for your help.

Name: _____

Company: _____

Address: _____

Phone: _____

Fax: _____

Comment: _____

_____

_____

_____

_____

Mail to: **support@quancom.de**

Fax to: **+49 2236 89 92 49**

Address: **QUANCOM Informationssysteme GmbH**
In der Flecht 14
50389 Wesseling
Germany

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